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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,106	02/28/2001	Koji Egashira	33082M072	8270

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SMITH, GAMBRELL & RUSSELL, LLP  
1850 M Street, N.W., Suite 800  
Washington, DC 20036

EXAMINER
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PERRIN, JOSEPH L

ART UNIT	PAPER NUMBER
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1746

MAIL DATE	DELIVERY MODE
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06/15/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

09/801,106

Applicant(s)

EGASHIRA ET AL.

Examiner

Joseph L. Perrin, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-15, 18, 24-25 & 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11, 14, 18, 24, 25 and 27 is/are allowed.
- 6) ☒ Claim(s) 10, 12, 13, 15, 28 and 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20070517</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 17 May 2007 has been entered.

### ***Response to Arguments***

2. Applicant's arguments in view of the amendment filed 17 May 2007 have been fully considered but they are not persuasive.

3. Turning to the rejection of the claims under 35 U.S.C. § 102, it is noted that the terminology in a pending application's claims is to be given its broadest reasonable interpretation (*In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)) and limitations from a pending application's specification will not be read into the claims (*Sjolund v. Musland*, 847 F.2d 1573, 1581-82, 6 USPQ2d 2020, 2027 (Fed. Cir. 1988)). Anticipation under 35 U.S.C. § 102 is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of a claimed invention. See *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570, 7 USPQ2d 1057, 1064 (Fed. Cir.), cert. denied, 488 U.S. 892

(1988); *RCA Corp. v. Applied Digital Data Sys., Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). Moreover, anticipation by a prior art reference does not require either the inventive concept of the claimed subject matter or the recognition of properties that are inherently possessed by the prior art reference. *Verdegaal Brothers Inc. v. Union Oil co. of California*, 814 F.2d 628, 633, 2 USPQ2d 1051, 1054 (Fed. Cir. 1987), cert. denied, 484 U.S. 827 (1987). A prior art reference anticipates the subject matter of a claim when that reference discloses each and every element set forth in the claim (*In re Paulsen*, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994) and *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990)); however, the law of anticipation does not require that the reference teach what Applicant is claiming, but only that the claims "read on" something disclosed in the reference. *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984) (and overruled in part on another issue), *SRI Intel v. Matsushita Elec. Corp. Of Am.*, 775 F.2d 1107, 1118, 227 USPQ 577, 583 (Fed. Cir. 1985). Also, a reference anticipates a claim if it discloses the claimed invention such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention. See *In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995), cert. denied, 116 S.Ct. 1362 (1996), quoting from *In re LeGrice*, 301 F.2d 929, 936, 133 USPQ 365, 372 (CCPA 1962).

4. Thus, regarding the §102 rejection Applicant points to claim 10 and argues that CHRISTENSON does not disclose the newly added limitation of the orifices formed so

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as to eject fluid in a fan-shaped pattern. The Examiner disagrees. CHRISTENSON discloses that the nozzles may be formed as a "fan jet" which is readable on a fan-shaped spray pattern spraying in a "plane" (col. 8, line 23) and inclined (for instance, Figure 5). Even if, *arguendo*, one were to construe the CHRISTENSON nozzles as being different than the claimed nozzles, SHORTES provides structural equivalent nozzles for spraying cleaning fluid in a fan-shaped spray pattern for the same purpose of CHRISTENSON and Applicant.

5. Regarding claim 24 (and claim 25 dependent thereon), Applicant's arguments in view of the instant amendment are persuasive and the rejection over these claims is withdrawn.

6. Regarding new claim 27, Applicant's arguments in view of the instant amendment are persuasive and the rejection over this claim is withdrawn.

7. Regarding new claim 28, Applicant argues that neither CHRISTENSON nor THOMPSON teach or suggest an inclined interface. The Examiner disagrees. Firstly, the concept of inclined including the chamber is a well-known concept and is common knowledge in the art for the purpose of assisting in drainage. Specifically, as cited in the rejection and discussed by Applicant in the instant response THOMPSON provides explicit teaching of inclined components including the inclined interface of a removable bowl for what appears to be the same purpose of Applicant of assisting in draining. Absent a showing of criticality for the claimed range or other secondary considerations the position is taken that it would have been obvious to provide inclination as taught by

THOMPSON in the apparatus of CHRISTENSON for the purpose of assisting in drainage.

8. Regarding new claim 29, Applicant argues that CHRISTENSON does not disclose rectangular nozzles. The Examiner disagrees. As shown in the Figures, CHRISTENSON discloses nozzles with rectangular inner passages. Even if, *arguendo*, one were to construe the nozzles as *not* being rectangular, the position is taken that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide nozzles of different conventional shapes, such as circular, rectangular, and the like, since such a modification would have involved a mere change in the form or shape of a component. A change in form or shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 149 USPQ 47 (CCPA 1976). The Examiner notes that nozzle shapes such as circular and rectangular are common knowledge in the art, and the selection of these common knowledge nozzle shapes as obvious variants would have been well within the level and knowledge generally available to one having ordinary skill in the art absent secondary considerations.

#### ***Claim Rejections - 35 USC § 102***

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 10, 12-13, 15 & 29 are rejected under 35 U.S.C. 102(e) as being anticipated by CHRISTENSON, or in the alternative under 35 U.S.C. 103(a) as being

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obvious over CHRISTENSON either alone or in view of U.S. Patent No. 4,027,686 to SHORTES *et al.* ("SHORTES"). CHRISTENSON discloses a liquid processing apparatus comprising a processing container forming a chamber, horizontally holding the wafers, plural nozzles inclined at an incidence angle and arranged to spray processing liquid toward the center of the substrates, that "[t]he incidence angle  $\alpha$  of any stream 330 can be the same or it can be different as desired for a particular application" and that "[a]lternative methods for aiding the distribution of ozonated water can also be used, including ... rotation of the wafers 319." (See entire document, for instance, Figure 5 and col. 11, lines 24-46). CHRISTENSON also discloses the nozzles may be formed as a fan jet which is readable on spraying in a "plane" (col. 8, line 23) and appear to be rectangular and inclined (for instance, Figures 2 & 5). The Examiner notes that the intended use of spraying in a diameter or radius of the article to be worked upon is considered intended use and afforded little patentable weight since such use is wholly dependent on the variable size of the article being worked upon and the adjustable incidence angle disclosed by CHRISTENSON. MPEP 2115 and caselaw is replete with teachings disclosing that expressions relating an apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). Moreover, the position is taken that one having ordinary skill in the art at the time the invention was

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made would have at once envisaged adjusting the incidence angle to achieve applicant's intended use since slightly adjusting the angle to redirect fluid flow to the wafer would have been a reasonable conclusion to the disclosed angle adjustability of CHRISTENSON. The position is taken that the disclosure of CHRISTENSON reads on applicant's claimed invention and one having ordinary skill in the art would construe the fan jet nozzle disclosure of CHRISTENSON to read on the claimed nozzles being formed to spray fluid in a fan-shaped pattern.

However, regarding claims 10, 12, 13 & 15, even if *arguendo* one were to construe the fan jet nozzles of CHRISTENSON as *not* fully reading on the claimed nozzles, SHORTES provides explicit teaching of spraying a rotating semiconductor wafer with a fan-shaped spray pattern at an incline and across the diameter of the wafer in order to provide proper cleaning and removal of "surface debris" on the wafer surface. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the wafer spray cleaning apparatus of CHRISTENSON with any structural equivalent cleaning nozzle such as the cleaning nozzle of SHORTES which is formed to provide a fan-shaped spray pattern since such cleaning nozzles are considered structural equivalents and it appears that the invention would perform equally well with other spray cleaning nozzles and the selection of any of these known equivalents to provide surface cleaning would be within the level of ordinary skill in the art.

Regarding claim 29, even if *arguendo* one were to construe the inside nozzle passage shape of CHRISTENSON as *not* fully reading on the claimed rectangular



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nozzles the position is taken that it would have been obvious to provide nozzles of different conventional shapes, such as circular, rectangular, and the like, since such a modification would have involved a mere change in the form or shape of a component. A change in form or shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey*, 149 USPQ 47 (CCPA 1976).

***Claim Rejections - 35 USC § 103***

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

12. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over CHRISTENSON in view of THOMPSON '419 (previously cited). Recitation of CHRISTENSON is repeated here from above. CHRISTENSON discloses the claimed invention with the exception of the container having an inner face inclination angle. THOMPSON '419 teaches that it is known to provide a substrate processing container at an angle "to assist in effluent drainage" of the container (see Figures and col. 2, line 3 *et seq.*). Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the container of CHRISTENSON to angle or incline the container, as disclosed in THOMPSON '419, in order to provide more effluent drainage of the liquid processing apparatus.

***Allowable Subject Matter***

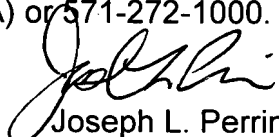
13. Claims 11, 14, 18, 24-25 and 27 are allowed.

**Conclusion**

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (571)272-1305. The examiner can normally be reached on M-F 7:00-4:30, except alternate Fridays.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Joseph L. Perrin, Ph.D.  
Primary Examiner  
Art Unit 1746

JLP